In the Claims:

Please amend claims 1-9, 11, 13, 22, 35, 40, 41, 43 and 44 as follows:

1.   (Once Amended) A metadata model transformer for transforming a metadata model, the metadata model having a lower layer containing one or more model objects having a lower degree of abstraction and a higher layer containing one or more model objects having a higher degree of abstraction, the transformer comprising:

a lower-to-higher transformation having:

means for obtaining information from a model object in the lower layer;

means for abstracting the information by adding business intelligence; and

means for creating a model object in the higher layer corresponding to the model object in the lower layer.

2.   (Once Amended) A metadata model transformer as claimed in claim 1 further comprising:

a lower layer transformation having:

means for obtaining information from a model object in the lower layer;

means for modifying the obtained information; and

means for transforming the model object in the lower layer based on the modified information.

3.   (Once Amended) A metadata model transformer as claimed in claim 1 further comprising:

a lower layer transformation having:

means for obtaining information from a model object in the lower layer;

means for determining a specific feature included in the obtained information; and

means for creating a new model object in the lower layer based on the specific feature.

4. (Once Amended) A metadata model transformer as claimed in claim 1 further comprising:

a lower layer transformation having:

means for obtaining relationship information between multiple model objects in the lower layer; and

means for creating a new model object in the lower layer based on the relationship information.

5. (Once Amended) A metadata model transformer as claimed in claim 1 further comprising:

a higher layer transformation having:

means for obtaining information from a model object in the higher layer;

means for modifying the obtained information; and

means for transforming the model object in the higher layer based on the modified information.

6. (Once Amended) A metadata model transformer as claimed in claim 1 further comprising:

a higher layer transformation having:

means for obtaining information of a model object in the higher layer;

means for determining a specific feature included in the obtained information; and

means for creating a new model object in the higher layer based on the specific feature.

7.   (Once Amended) A metadata model transformer as claimed in claim 1 further comprising:

a higher layer transformation having:

means for obtaining relationship information between multiple model objects in the higher layer; and

means for creating a new model object in the higher layer based on the relationship information.

8.   (Once Amended) A metadata model transformer as claimed in claim 1 further comprising:

a higher layer transformation having:

means for selecting a subset of the model objects in the higher layer; and

means for creating a new model object in the higher layer based on the selected subset of the model objects in the higher layer.

9.   (Once Amended) A metadata model transformer for transforming a metadata model that represents one or more data sources having physical data, the metadata model having a data access layer containing data access model objects, a business layer containing business model objects, and a package layer containing package model objects, the transformation comprising:

one or more data access model transformations for refining description of the physical data in the data source expressed by the data access model objects;

one or more data access to business model transformations for constructing business model objects based on the data access model objects;

one or more business model transformations for refining the business rules expressed by the business model objects; and

one or more business to package model transformations for constructing package model objects based on the business model objects.

11.   (Once Amended) A metadata model transformer as claimed in claim 9, wherein the business model transformations refine the business rules by changing the business model objects.

13.   (Once Amended) A metadata model transformer as claimed in claim 9 further comprising:

one or more package model transformations for constructing a new package model object based on the package model objects in the model.

22.   (Once Amended) A metadata model transformer as claimed in claim 21, wherein

the business model objects include entities that exist as an implementation artifact of a many to many relationship, and business joins associated with the entities; and

the business model transformations include a many to many join relationship fixing transformation for locating the entities, and replacing the associated business joins with a single business join.

35.   (Once Amended) A method for transforming a metadata model for containing model objects, the metadata model having multiple layers including a lower layer containing one or more model objects having a lower degree of abstraction and a higher layer containing one or more model objects having a higher degree of abstraction, the method comprising steps of:

obtaining information from a model object in the lower layer;

abstracting the information by adding business intelligence; and

creating a model object in the higher layer corresponding to the model object in the lower layer.

40.   (Once Amended) A method as claimed in claim 36, further comprising a step of constructing a new package layer based on the business model objects in the model.

41.   (Once Amended) A method as claimed in claim 40, wherein the step of constructing a new package layer uses the business model objects that include business model objects which are constructed via import from one or more metadata sources.

43.   (Once Amended) A computer readable memory for storing code which identifying instructions for transforming a metadata model for containing model objects, the metadata model having multiple layers including a lower layer containing one or more model objects having a lower degree of abstraction and a higher layer containing one or more model objects having a higher degree of abstraction, the instructions comprising:

obtaining information from a model object in the lower layer;

abstracting the information by adding business intelligence; and

creating a model object in the higher layer corresponding to the model object in the lower layer.

44.   (Once Amended) A computer data signal representing code which identifying instructions for transforming a metadata model for containing model objects, the metadata model having multiple layers including a lower layer containing one or more model objects having a lower degree of abstraction and a higher layer containing one or more model objects having a higher degree of abstraction, the instructions comprising:

obtaining information from a model object in the lower layer;

abstracting the information by adding business intelligence; and

creating a model object in the higher layer corresponding to the model object in the lower layer.